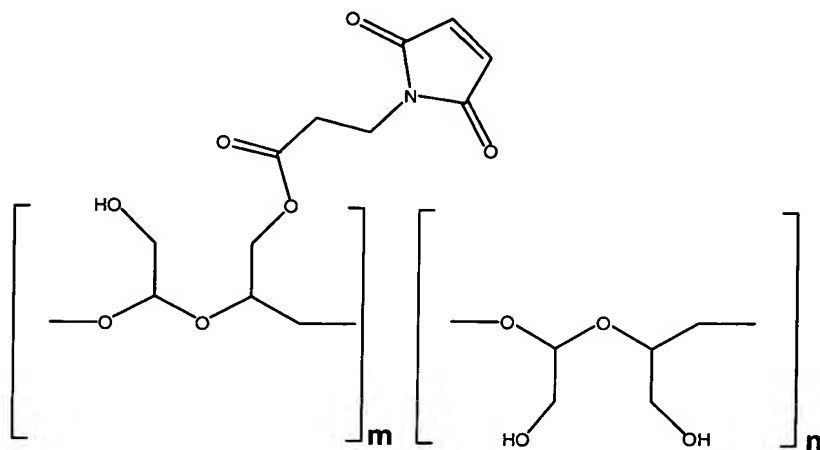


A-822

What is claimed is:

1. A biodegradable, biocompatible polyacetal derivative having a chemical structure of:

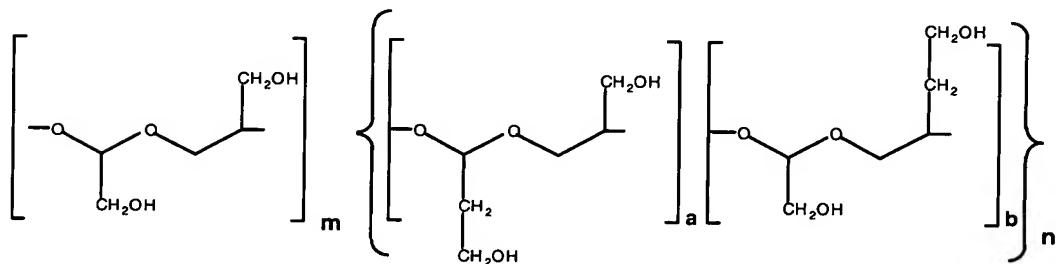


5

wherein m:n is from 0.1:10.

2. A biodegradable, biocompatible polyacetal derivative having a chemical structure of:

10



wherein m:n is from 2:1 to 10:1.

3. A polyacetal-protein conjugate, wherein said polyacetal is the derivative of claim 1.

4. A polyacetal-protein conjugate, wherein
5 said polyacetal is the derivative of claim 2.

5. The polyacetal-protein conjugate of claim 3, wherein the protein is selected from the group consisting of an antibody, etanercept, insulin,
10 gastrin, prolactin, adrenocorticotrophic hormone (ACTH), thyroid stimulating hormone (TSH), luteinizing hormone (LH), follicle stimulating hormone (FSH), human chorionic gonadotropin (HCG), motilin, interferon alpha, interferon beta, interferon gamma, tumor
15 necrosis factor (TNF), tumor necrosis factor-binding protein (TNF-bp), brain derived neurotrophic factor (BDNF), glial derived neurotrophic factor (GDNF), neurotrophic factor 3 (NT3), fibroblast growth factors (FGF), neurotrophic growth factor (NGF), bone growth
20 factors such as osteoprotegerin (OPG), insulin-like growth factors (IGFs), macrophage colony stimulating factor (M-CSF), granulocyte macrophage colony stimulating factor (GM-CSF), megakaryocyte derived growth factor (MGDF), keratinocyte growth factor (KGF),
25 thrombopoietin, platelet-derived growth factor (PDGF), colony stimulating growth factors (CSFs), bone morphogenetic protein (BMP), superoxide dismutase (SOD), tissue plasminogen activator (TPA), urokinase, streptokinase, kallikrein, flt3 ligand, CD40 ligand,
30 thrombopoietin, calcitonin, Fas ligand, ligand for receptor activator of NF-kappa B (RANKL), tumor necrosis factor (TNF)-related apoptosis-inducing ligand (TRAIL), thymic stroma-derived lymphopoietin, mast cell growth factor, stem cell growth factor, epidermal

growth factor, RANTES, growth hormone, insulinotropin,
parathyroid hormone, glucagon, interleukins 1 through
18, colony stimulating factors, lymphotoxin-beta,
leukemia inhibitory factor, oncostatin-M, an Eph
5 receptor, and Ephrin ligands.

6. The polyacetal-protein conjugate of
claim 4, wherein the protein is selected from the group
consisting of an antibody, etanercept, insulin,
10 gastrin, prolactin, adrenocorticotrophic hormone (ACTH),
thyroid stimulating hormone (TSH), luteinizing hormone
(LH), follicle stimulating hormone (FSH), human
chorionic gonadotropin (HCG), motilin, interferon
alpha, interferon beta, interferon gamma, tumor
15 necrosis factor (TNF), tumor necrosis factor-binding
protein (TNF-bp), brain derived neurotrophic factor
(BDNF), glial derived neurotrophic factor (GDNF),
neurotrophic factor 3 (NT3), fibroblast growth factors
(FGF), neurotrophic growth factor (NGF), bone growth
20 factors such as osteoprotegerin (OPG), insulin-like
growth factors (IGFs), macrophage colony stimulating
factor (M-CSF), granulocyte macrophage colony
stimulating factor (GM-CSF), megakaryocyte derived
growth factor (MGDF), keratinocyte growth factor (KGF),
25 thrombopoietin, platelet-derived growth factor (PDGF),
colony stimulating growth factors (CSFs), bone
morphogenetic protein (BMP), superoxide dismutase
(SOD), tissue plasminogen activator (TPA), urokinase,
streptokinase, kallikrein, flt3 ligand, CD40 ligand,
30 thrombopoietin, calcitonin, Fas ligand, ligand for
receptor activator of NF-kappa B (RANKL), tumor
necrosis factor (TNF)-related apoptosis-inducing ligand
(TRAIL), thymic stroma-derived lymphopoietin, mast cell
growth factor, stem cell growth factor, epidermal

growth factor, RANTES, growth hormone, insulinotropin,
parathyroid hormone, glucagon, interleukins 1 through
18, colony stimulating factors, lymphotoxin-beta,
leukemia inhibitory factor, oncostatin-M, an Eph
5 receptor, and Ephrin ligands.

7. A composition comprising a polyacetal-
protein conjugate selected from the group consisting of
claims 3 and 4, and optionally a pharmaceutically
10 acceptable carrier.

8. A processes for preparing a
biodegradable, biocompatible polyacetal polyacetal-
protein conjugate, said process comprising: (a)
15 preparing a polyacetal derivative; (b) conjugating said
polyacetal derivative to a protein to provide a
polyacetal-protein conjugate; (c) isolating said
polyacetal-protein conjugate.

20 9. A method of treating obesity comprising
administering an effective amount of a polyacetal-
leptin conjugate to a patient in need thereof.

25 10. A method of treating inflammation
comprising administering an effective amount of a
polyacetal-IL-1ra conjugate to a patient in need
thereof.